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ABSTRACT

The purpose of this study was to determine teachers' perceptions of the effects of implementation of the philosophy, curriculum structure, instructional development system, assessment and monitoring procedures, instructional organization, and staff development process of Outcomes-Based Education (OBE) and to determine if teachers' perceptions of OBE issues differ in relation to their level of teaching assignment, years of teaching experience, and level of education attained. The study's sample consisted of 60 core curriculum classroom teachers. Their perceptions were gathered by using a six-point Likert-type Delta Technique survey. Comments followed 39 survey statements. Eighty percent of the surveys were returned. Group means were calculated for the responses to statements in the six OBE-related areas. An analysis of variance and Scheffe tests were conducted on each of the 39 survey statements to determine differences among the groups. The findings revealed that level of teaching assignment was the independent variable cited as showing differences among the groups of respondents for 11 of the statements; level of teaching experience and level of education attained were the area of significant difference for one statement; and years of teaching experience and level of education provided differences for one statement. Recommendations include procedures for staff development programs to address the practical concerns of teachers about their grade level's use of OBE. (Author/JAM)

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Teachers' Perceptions of the Effects of Implementation of Outcomes-Based Education

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ABSTRACT

The purpose of the study was to determine teachers' perceptions of the effects of implementation of the philosophy, curriculum structure, instructional development system, assessment and monitoring procedures, instructional organization, and staff development process of Outcomes-Based Education (OBE) and to determine if teachers' perceptions of OBE issues differ in relation to their level of teaching assignment, years of teaching experience, and level of education attained.

Teachers' perceptions were gathered by using three rounds of a Delphi Technique survey. The participants marked a six-point Likert scale and added their comments following each statement. The Delphi Technique elicited a variety of comments and provoked written discussion until there existed positive perceptions and a general agreement with the basic premises of Outcomes-Based Education. Eighty percent of the surveys were returned.

The study's sample consisted of 60 core curriculum classroom teachers in primary, intermediate, middle and

high school grades in the Sioux City, Iowa, Community School District. Group means were calculated for the responses to statements in the six OBE-related areas. Group means ranged from 4.021 (mild agreement) to 5.479 (nearly strong agreement), indicating positive perceptions of the OBE concepts.

An analysis of variance (ANOVA) and post hoc multiple comparison Scheffe tests were conducted on each of the 39 survey statements to determine differences among the groups. All data were tested at the .05 level. A total of 16 main effects were found significant for 14 of the survey statements. Level of teaching assignment was the independent variable cited as showing differences among the groups of respondents for 11 of the statements. Level of teaching assignment and level of education attained provided differences for one statement. Level of education attained was the area of significant difference for one statement. Years of teaching experience and level of education provided differences for one statement.

Recommendations included procedures for staff development programs to address the practical concerns of teachers about their grade level's use of OBE.

Introduction

The Iowa State Department of Education has issued new standards of minimum requirements that must be met by Iowa schools effective July 1, 1989. The new standards state, in part, that

> ... the board shall adopt a policy outlining its procedures for developing, implementing, and evaluating its total curriculum. Each curriculum area shall have goals; suggested instructional activities, materials, and content; and expected student outcomes for each level of instruction. The policy shall identify valid, bias-free student assessment procedures and the process for monitoring student progress. [Iowa Board of Education, 1988, 12.5(14)]

One option for compliance with this mandate, is for school districts to investigate implementing an Outcomes-Based Education program. Outcomes-Based Education (OBE) is a derivative of at least two systematic approaches to instruction and assessment. One approach, mastery learning, stresses individualized instruction in which students are provided the

necessary time to master a component of the curriculum before going on to the next learning component. The other approach is competency-based education which describes efforts at defining and evaluating student performance.

Spady, Filby and Burns (1986) outlined two fundamental principles shared by all outcome-based education programs. First, instructional practice is designed around clearly defined outcomes that all students must demonstrate. Second, schools must provide the opportunity for all students to reach the learning outcomes. This implies that OBE programs must afford teachers the necessary flexibility of time, grouping arrangements, teaching methods and materials to closely match the student and the curriculum.

In considering an OBE program, districts should inspect the following instructional components: philosophy, curriculum structure, instructional practice and delivery, assessment procedures, and organizational arrangements. Districts should also investigate the utilization of administrative and staff development processes.

OBE programs assert a philosophy that all students can learn and that teachers can teach so that all students can learn. The curriculum is organized in segments that have outcomes defined in terms of goals and objectives. Standards of student performance directly related to the goals and objectives are defined. Curricular materials are sequenced to support the attainment of the outcome goals and objectives.

Instructional practice and delivery refers to the concepts of mastery learning which emphasize time as a variable in student learning. By recognizing differences in students learning rates, teachers can organize instruction so that students can achieve the outcomes.

Assessment and monitoring procedures provide the evidence for making instructional decisions concerning student attainment or nonattainment of the outcome(s) in that learning unit. The instructional model of Teach-Test-Reteach-Retest incorporates formative feedback to the student as well as summative evaluation.

Student advancement in an OBE program may vary according to when and how fast students achieve the

outcome. Consequently, OBE programs utilize organizational arrangements that vary instructional pace by classroom configuration (Burns, 1987).

Participation in staff development procedures relating to OBE program components are recommended for administrators and teachers because of the multitude of changes integral to implementing an OBE program. Implementing such widespread changes without administrator and teacher preparation and consultation may "create tension and animosity" (Burns, 1987, p. 20).

Need for the Study

Responses of districts to the widespread call for accountability have consisted of instituting programs of competency requirements, minimum competency testing, mastery learning or derivations of such programs. With the advent of state mandates requiring districts to put in place procedures for developing, implementing and evaluating the total curriculum, from goals through student outcomes, districts may be looking for systematic approaches to instruction and assessment by which the educational needs of students may be met.

One such systematic approach is Outcomes-Based Education (OBE).

The implementation of such a systematic program would impact all areas of the instructional process. Prior to beginning implementation procedures within a district, it would be helpful for the administration to have an idea of the perceptions of teachers regarding the proposed innovations and take those into account when making plans for the implementation. Top-down decisions about the program being carried out are more likely to produce undesirable side effects and minimal recipient satisfaction (Fenstermacher and Berliner, 1985). Neither top-down nor bottom-up but rather collaborative planning by teachers and administrators results in more effective implementation of resulting plans (Berman and McLaughlin, 1978).

In this study, the perceptions of teachers concerning the effect of implementation of an OBE program on areas of the instructional process were determined. The results and recommendations of this study were presented to the district's teachers and administration. A district implementation plan including collaborative planning of the change process

could then be developed to focus on areas of the instructional process perceived by the teachers to need staff development and administrative support.

Statement of the Problem

The purpose of the study was to determine teachers' perceptions concerning the effects of implementation of Outcomes-Based Education (OBE).

Research Questions

The study was designed to answer the following questions:

1. What are teachers' perceptions of the philosophy of OBE?
2. What are teachers' perceptions of the effects of OBE on the curriculum structure?
3. What are teachers' perceptions of the effects of OBE on the instructional delivery system?
4. What are teachers' perceptions of the effects of OBE on the assessment and monitoring procedures?

5. What are teachers' perceptions of the effects of OBE on the instructional organization of the schools?
6. What are the teachers' perceptions of the implications of OBE implementation on teacher and administrator staff development programs?
7. Do teachers' perceptions of OBE issues differ in relation to their teaching assignment to elementary, middle or high school levels?
8. Do teachers' perceptions of OBE issues differ in relation to the teachers' number of years of teaching experience in the district?
9. Do teachers' perceptions of OBE issues differ in relation to the teachers' level of education attained?

The Delphi Technique

Perceptions of teachers regarding the effects of the implementation of OBE were gathered by using a survey questionnaire administered in a Delphi Technique. The Delphi Technique is a method developed by the Rand Corporation to gain consensus among persons who are knowledgeable about a field. The Delphi

Technique is a method of engaging participants in an anonymous debate and is a recommended technique for reaching consensus in curriculum goals, content and instructional considerations (Cyphert & Gant, 1971; Hartman, 1981; Spinelli, 1983; Weaver, 1971). The survey consisted of an initial round of statements and then multiple iterations, or rounds, of the statements. Each round included a summary of the participants' responses to the statements of the previous rounds. (See APPENDIX for initial round survey instrument).

A set of surveys was prepared relating to the areas of concerns of Outcomes-Based Education, and the participants were asked to record their reactions to those statements in two ways. Individuals indicated their level of agreement with each statement by marking a six-point Likert scale. The use of a six-point scale eliminated the neutral choice, thus encouraging respondents to state a degree of agreement in regard to the statement. Participants were also asked to add their remarks in a comment section following each statement. These two types of responses indicated teachers' perceptions of the issues addressed.

Among the advantages of using the Delphi Technique are that issues are clarified, the final result is likely to reflect much more careful thought than would be obtained from a single questionnaire, and the method tends to build consensus since each participant is asked to examine his own response more than once in light of the responses of other participants. The Delphi is a "desirable technique to use in school needs surveys because it will make it much easier to implement the findings" (Borg & Gall, 1983, p. 414).

Delbecq, Van de Ven & Gustafson, (1975) summarized advantages of the Delphi technique as "elimination of the negative social-emotional aspects of group discussion when the participants are anonymous" (p. 10). In a Delphi, there exists freedom not to conform to a group behavior, and high quantity as well as high quality and specificity of ideas may be produced. Methods of conflict resolution in a Delphi are problem-centered, rather than person-centered as in an interaction face-to-face discussion. The main disadvantage of the Delphi technique is that it requires a considerable time (two months or more) to carry out (Delbecq, Van de Ven & Gustafson, 1975).

The first round of this survey was sent to 60 participants on January 25, 1989. On February 3, a follow-up letter was sent to those participants who had not returned round one. A feedback report and the second round survey were sent out March 1, 1989, to the 54 participants who returned the first round. On March 13, 1989, a follow-up letter was sent to those participants who had not returned the second survey. The second round feedback report, which summarized the participants' responses, was mailed to the 52 remaining participants, along with the third iteration of the survey on March 21, 1989. Follow up telephone calls were made on April 5, 1989 to the participants who had not returned round three. A total of 48 third round surveys were completed and returned. The feedback report for the third round was sent to participants on April 25, 1989, as a culminating activity for the survey. This schedule allowed time between rounds for participants to complete and return their questionnaires and time to compile the results to be incorporated in the next iteration. Table 1 summarizes the timeframe of this Delphi survey.

Table 1

Timeframe of Survey and Feedback Iterations

	Survey sent	Follow up letter/call	Feedback report sent
Round One	Jan. 25	Feb. 3	March 1
Round Two	March 1	March 13	March 21
Round Three	March 21	April 5	April 25

Because the objectives of the of survey were to seek out information on the teachers' perceptions which may generate a consensus among the respondent group and to provide information to the group concerning the diverse yet interrelated aspects of the topic, the Delphi Technique was chosen as the methodology for this study. The Delphi Technique allowed anonymous discussion of the ideas presented in the statements, so that the participants could focus on the issues rather than personal influences. This method also provided opportunities to inform the respondents concerning the topic of Outcomes-Based Education.

Sample of the Population Studied

Studies using the Delphi technique have used a varying number of participants. Stag (1983) involved 9 participants in a Delphi survey, while Irvine (1986) had 66 participants in a Delphi study. There is "considerable variance possible in Delphi formats relative to design and implementation" (Delbecq, Van de Ven & Gustafson, 1975, p. 11).

The population of the study was 451 classroom teachers in core curriculum areas in the Sioux City, Iowa, Community School District. The 77 middle school and 91 high school teachers were teachers of science, social studies, mathematics or language arts. The 190 primary elementary teachers and the 93 intermediate teachers were each teachers of science, social studies, mathematics and language arts.

Stratified random samples produced 60 participants from the following strata: primary grade elementary teachers (25), intermediate grade elementary teachers (13), middle school teachers (10) and high school teachers (12). The number of participants for each cell was decided by the following formula:

number of teachers in a strata / number in population	X	number in study	=	number for the cell

Table 2 shows the number and percentage of participants by level of teaching assignment. Table 3 shows the number and percentage of participants by years of teaching experience. Table 4 shows the number and percentage of participants by level of education attained.

Table 2

Frequency and Percentage of Participants by Level of Teaching Assignment

Level of Teaching Assignment	n	%
primary (K-2)	20	41.7
intermediate (3-5)	11	22.8
middle school (6-8)	8	16.7
high school (9-12)	9	18.8

Table 3

Frequency and Percentage of Participants by Years of Teaching Experience

Years of Teaching Experience	n	%
0-5	8	16.7
6-10	6	12.5
11-15	10	20.8
16-20	10	20.8
21-25	5	10.4
26+	9	18.8

Table 4

Frequency and Percentage of Participants by Level of Education Attained

Level of Education Attained	n	%
BA/BS	9	18.8
BA/BS +15 hours	19	39.6
MA	11	22.8
MA +15 hours	3	6.3
MA +30 hours	6	12.5
Doctorate	0	0.0

Survey Procedures

When the Delphi instrument was constructed, it was noted that "the specific form is generally determined by the nature of the problem being investigated" (Delbecq, Van de Ven & Gustafson, 1975, p. 11). The survey, administered in three iterations, contained statements pertaining to the following areas effected by the implementation of Outcomes-Based Education: philosophy, instructional delivery, instructional

organization, assessment and monitoring procedures, and staff development.

The survey was mailed to respondents through the school district's intra-district mailing system. (See APPENDIX). Each copy of the survey was coded for use in making follow-up contacts with the participants. As each round of the survey was returned, the numerical responses to each statement were tallied and the comments for each statement were compiled. For each iteration of the survey, a feedback report was generated. Each feedback report included the mode, or most frequently occurring response to each statement, as well as the comments written in response to the statements. The feedback reports were shared with the participants as part of the next round of statements. Respondents were urged to rethink their own responses, if different from the group responses, mark their current response and offer additional comments.

According to Linstone and Turoff (1975), "In most Delphis, consensus is assumed to have been achieved when a certain percentage of the votes fall within a prescribed range" (p. 277). In the Delphi, the participants were deemed to have reached agreement on a

statement when 75 percent of the group responded to adjacent, like categories on the six-point Likert scale and displayed consistency among the written comments. Linstone and Turoff (1975) stated that "considering that there is a strong natural tendency in the Delphi for opinion to centralize, resistance in the form of unconsensual responses should be viewed with special interest" (p. 277). The written comments were included as an indicator of perception because they reflected and clarified the position of the respondents when different from the group response.

The first round of the survey contained 39 statements for the participants to consider. (See APPENDIX). The second round presented 19 items, since 20 of the statements met the consensus criteria after round one. The third round of the survey contained seven statements to which the participants were asked to respond, since they had reached agreement on 12 statements during round two. "Because the interest lies in the opinion of the group rather than in that of individuals, this method is preferable to one that would measure the amount of change in each individual's

vote between rounds" (Linstone and Turoff, 1975, p.277).

Three rounds of the Delphi survey were conducted, with feedback reports generated for each round. Forty-eight of the 60 randomly selected participants completed three rounds of the survey, for a return of 80 percent.

Analysis of Data

A multiple analysis of variance (MANOVA) was attempted with the data, but could not be completed due to a lack of variance within the model. The SPSS-X software attempting the MANOVA issued multiple warnings indicating redundancies in the design matrix, and too few degrees of freedom in within cells. The within cells error matrix was found to be singular, with not enough variance to run interactions. Since interactions couldn't be processed, multivariate tests were not utilized. Instead, separate factorial analyses of variance (ANOVA) were employed which showed the main effects, but not interactions, for each question.

The factorial ANOVA compared the dependent variables (scaled responses to the 39 Delphi survey statements) by the independent variables of level of teaching assignment (four categories), number of years of teaching (six categories) and level of education attained (six categories). "The error rate experimentwise is the probability that one or more erroneous statements will be made in an experiment" (Kirk, 1982, p.103). The experimentwise probability of a Type I error was large when alpha was set at .05 (39 x .05 = 1.95). The increased risk of a Type I error was accepted, however, to balance the lack of power due to the small sample size necessitated by the Delphi Technique. All data were tested at the .05 level of significance.

Additionally, post hoc multiple comparison Scheffe tests were conducted to determine significant differences among group means for those statements identified by the ANOVA. The Scheffe was used because of the unequal number of cell sizes in the research matrix. Because of the conservative nature of the Scheffe test, it did not allow for the detection of all

the variances. The results of the ANOVA and Scheffe tests are summarized in Chapter Four.

Research Questions One - Six

Tables 5-9 show the participants' responses to the statements in each section of the survey. The levels of agreement and their assigned values were strongly disagree (1), disagree (2), mildly disagree (3), mildly agree (4), agree (5), strongly agree (6). Research question one asked, "What are teachers' perceptions of the philosophy of OBE?". Section one of each round of the survey dealt with the philosophical basis of OBE. Table 5 shows the group means and standard deviations for the five statements in the section labeled Philosophy. The means indicate the level of the participants' agreement with the philosophical statements. The range of means for section one ($\bar{X}$ = 4.708 to 5.438) reflects mild to moderate agreement with the statements.

Table 5

Means and Standard Deviations for Statements in Survey Section I. Philosophy

	Mean	SD
1. Students can learn the required curriculum.	4.771	.722
2. Schools control the conditions under which learning takes place.	4.708	.798
3. Students are capable of achieving the essentials of formal schooling.	4.563	.987
4. Success influences self-concept...therefore, schools should develop success-oriented curriculums.	5.208	.898
5. Student achievement is influenced by ... climate which affirms the worth of students.	5.438	.920

Research question two asked, "What are teachers' perceptions of the effects of OBE on the curriculum structure?". The second section of the survey presented statements concerning the curriculum structure of OBE. Table 6 shows the group means and standard deviations for the six statements in the survey section labeled Curriculum Structure. The range of means ($\bar{X}$ = 4.938 to 5.458) indicates general agreement with the statements.

Table 6

Means and Standard Deviations for Statements in Survey Section II. Curriculum Structure

	Mean	SD
6. Schools should specify expected learning outcomes.	5.208	.743
7. Curriculum should be organized by specific learning objectives.	4.938	.810
8. Students should be expected to perform at high levels of learning.	5.146	.652
9. Curriculum development needs to be an ongoing, continual process.	5.458	.713
10. Every subject should have curriculum guides containing learning outcomes specified by grade level.	5.208	.824
11. Instruction should be geared toward desired student outcomes.	5.083	.986

Research question three asked, "What are teachers' perceptions of the effects of OBE on instructional practice?". The third section of the survey presented statements describing instructional delivery practices in OBE. Table 7 lists the six statements, as well as the group mean and standard deviation for each statement. Participants demonstrated agreement (within a range of X = 4.917 to 5.479) with the statements concerning Instructional Delivery.

Table 7

Means and Standard Deviations for Statements in Survey Section III. Instructional Delivery

	Mean	SD
12. The rate at which content is presented... by how well the students are mastering the information.	5.000	.978
13. Schools should vary the time allotted for learning according to the needs of students.	4.917	.821

(table continues)

	Outcomes-Based Education	
	Mean	SD
14. It is necessary for students to master prerequisite skills before moving on in the curriculum.	5.104	.627
15. Teachers should structure instruction so that all students experience ...success.	5.438	.681
16. Achieving successful learning outcomes is the responsibility of both the student and the teacher.	5.479	.684
17. Curriculum can be arranged according to learning outcomes...	4.917	.767

The fourth research question asked, "What are teachers' perceptions of the effects of OBE on the assessment and monitoring procedures?". Section four of the survey presented statements concerning the assessment and monitoring procedures in OBE. Table 8 displays the means and standard deviations for the six statements in the Assessment and Monitoring Procedures section. Again, the group of participants agreed (within a range of $\bar{X}$ = 4.021 to 5.146) with the OBE statements.

Table 8

Means and Standard Deviations for Statements in Survey Section IV. Assessment and Monitoring Procedures

	Mean	SD
18. Formative evaluation ...corrective feedback... part of every teaching unit.	4.917	1.048
19. Evidence of student learning...basis for next assignment.	4.750	.887
20. Students who do not initially master an objective...additional opportunities...	5.146	.714
21. Students who have mastered an objective... challenging objective.	5.125	.672
22. Schools should award grades/credit whenever student mastery is demonstrated.	4.021	1.176
23. Criterion-referenced tests...to achieve an alignment between teaching and testing.	5.146	.652

Research question five asked, "What are teachers' perceptions of the effects of instructional organization of the schools?". The fifth survey section pertained to the organizational structure of OBE. Table 9 lists the group mean and standard deviation for each of the five statements. Participants agreed (within a range of X = 4.167 to 4.938) with each of the concepts of Organizational Structure of OBE.

Table 9

Means and Standard Deviations for Statements in Survey Section V. Organizational Structure

	Mean	SD
24. Flexible grouping of students...process for planning and providing appropriate instruction...	4.458	.771
25. Schools should ...regroup students... according to the objectives the students need.	4.563	.965
26. A criterion-referenced management system...grouping of students.	4.458	.874
27. With a system of flexible grouping...a computerized management system should be utilized.	4.167	1.155
28. Providing frequent formative evaluation and corrective feedback to students should be ... every teaching unit.	4.968	.885

The sixth research question of the study was, "What are the teachers' perceptions of the implications of OBE implementation on teacher and administrator staff development programs?". The sixth section of the surveys solicited participants' responses to eleven statements on staff development planning. Table 10 shows the mean and standard deviation for each of the statements. The respondents agreed (X = 4.188 to 5.438) with the statements concerning Staff Development.

Table 10

Means and Standard Deviations for Statements in Survey Section VI. Administrative Support and Staff Development

	Mean	SD
29. Teachers should be included in the planning of organizational changes.	5.438	.712
30. The adjustments... OBE...facilitate student learning.	4.812	.790
31. Teachers...inservice ...mastery learning... prior to instituting an OBE system.	5.271	1.047
32. Teachers...inservice ...assessment and monitoring...	5.354	.812
33. Teachers...inservice ...instructional management principles...	5.313	.926
34. The administrators... inservice...mastery learning ...prior to implementing an OBE system.	5.375	.981

(table continues)

	Outcomes-Based Education	
	Mean	SD
35. The administrators... inservice... assessment and monitoring....	5.396	.869
36. The administrators... inservice...instructional management principles...	5.396	.869
37. Teachers and administrators should be involved in selecting/writing grade level objectives.	5.354	.863
38. Teachers and administrators should be involved in writing/choosing the curriculum to teach the objectives.	5.375	.733
39. From what I've read about OBE, my teaching would have to change...	4.188	1.045

Research Questions Seven - Nine

Research questions seven, eight and nine asked if teachers' perceptions of OBE issues differ in relation to their level of teaching assignment, years of teaching experience and level of education attained. A factorial ANOVA was performed on each of the 39 survey statements to show main effects with interactions suppressed. All data were tested at the .05 level. Post hoc multiple comparison Scheffe tests were conducted to determine significant differences among group means. Analysis of responses to 25 of the survey statements showed no significant statistical differences among group means.

Analysis of the responses to 14 of the survey statements indicated differences among the groups. Sixteen main effects were found significant for 14 of the survey statements. The specifics regarding these main effects will be addressed in the paragraphs to follow.

Survey statement #2 [Schools control the conditions under which learning takes place] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of

teaching assignment ($F = 3.678$, $df = 3/47$, $p<.05$). Using the post hoc multiple comparison Scheffe test, significant differences were found between the middle school respondents and the primary elementary respondents, as well as between the middle school respondents and the intermediate elementary school respondents. Typical responses of middle school teachers were :

> Schools cannot control: the hours a student works which cuts into outside study time; the amount of sleep a student gets which is a factor in learning; the parents' attitude toward formal schooling which often determines the students' attitude.
>
> Not absences of students.

Elementary teacher responses were represented by the following:

> The schools control the materials available. Teachers control how materials are used and how concepts are taught. The schools, therefore, do have quite a bit of control over many of the conditions under which learning takes place.

The atmosphere, the conditions and expectations are set by the principal and staff of the school. School climate is an attitude, as well as, a physical condition.

Tables 11 and 12 summarize the results for statement #2.

Table 11

Significant ANOVA Results for Statement #2

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	5.927	3	1.976	3.678	.021*
Years of Teaching Experience	1.798	5	.360	.669	.649
Level of Education Attained	1.656	4	.414	.770	.552
Within	18.803	35	.537		
Total	29.917	47	.637		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	4.95	20
Intermediate Elementary (4-5)	5.00	11
Middle School (6-8)	4.00	8
High School (9-12)	4.44	9

*p< .05.

Table 12

Significant Scheffe Test Results for Statement #2

Mean	Group	Middle	High	Primary	Intermed
4.00	Middle				
4.44	High				
4.95	Primary	*			
5.00	Intermediate	*			

(*) denotes pairs of groups significantly different at the .05 level.

Survey statement #4 [Success influences self-concept... Therefore schools should develop success-oriented curriculum] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.491$, $df = 3/47$, $p < .05$). The Scheffe test did not identify any significant differences between the groups. It is assumed that the differences exist between the groups as indicated by the group means on the ANOVA. The following were typical of the middle school teachers' responses:

> Self concept is not enhanced when students are put in watered down courses.
>
> A person must want to have success. There is more to being successful than to have it provided for you.

Table 13 summarizes the results for statement #4.

Table 13

Significant ANOVA Results for Statement # 4

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	7.257	3	2.419	3.491	.026*
Years of Teaching Experience	3.560	5	.712	1.027	.417
Level of Education Attained	3.618	4	.905	1.305	.287
Within	24.251	35	.693		
Total	37.917	47	.807		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.40	20
Intermediate Elementary (4-5)	5.55	11
Middle School (6-8)	4.63	8
High School (9-12)	4.89	9

*$p < .05$.

Survey statement #5 [Student achievement is influenced... classroom climate which affirms worth of students] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.669$, $df = 3/47$, $p < .05$). The Scheffe test did not identify any significant differences between the groups. It is assumed that the differences exist between the groups as indicated by the group means for level of teaching assignment. The following is a typical elementary teacher response:

> Each and every student is unique and special in some way. Students who feel accepted for themselves are better able to learn.

Table 14 summarizes the results for statement #5.

Table 14

Significant ANOVA results for statement #5

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	7.653	3	2.551	3.669	.021*
Years of Teaching Experience	6.804	5	1.361	1.957	.110
Level of Education Attained	2.706	4	.677	.973	.435
Within	24.335	35	.695		
Total	39.812	47	.847		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.65	20
Intermediate Elementary (4-5)	5.73	11
Middle School (6-8)	5.38	8
High School (9-12)	4.67	9

*p< .05.

Survey statement #7 [Curriculum should be organized by specific learning outcomes] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 5.923$, $df = 3/47$, $p < .05$). Using the Scheffe test, significant differences were found between the middle school respondents and the intermediate elementary respondents for level of teaching assignment. The first two following comments were submitted by elementary teachers, the last by a middle school teacher:

> We need to know exactly what we're aiming for!
>
> Students need to know what is expected of them.
>
> Yes, but not to the point of killing spontaneous teaching or squelching the children's interest in a topic not related to their curriculum. A lot of terrific teaching and learning takes place because of an observable occasion or interest.

Tables 15 and 16 summarize the results for statement #7.

Table 15

Significant ANOVA Results for Statement #7

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	8.661	3	2.887	5.923	.002*
Years of Teaching Experience	3.692	5	.738	1.515	.210
Level of Education Attained	4.978	4	1.245	2.553	.056
Within	17.061	35	.487		
Total	30.812	47	.656		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.00	20
Intermediate Elementary (4-5)	5.45	11
Middle School (6-8)	4.38	8
High School (9-12)	4.67	9

*p< .05.

Table 16

Significant Scheffe Results for Statement #7.

Mean	Group	Middle	High	Primary	Intermed.
4.375	Middle				
4.666	High				
5.000	Primary				
5.454	Intermed.	*			

(*) denotes pairs of groups significantly different at the .05 level.

The statement [The rate at which content is presented to students should be determined by how well the students are mastering the information] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.824$, $df = 3/47$, $p < .05$). The Scheffe test did not identify any significant differences between groups. It is assumed that the differences exist between the groups as indicated by the group means. Several teachers responded as follows:

If they don't master the beginning concepts, there's no point going on. You have to have something to build on.

Table 17 summarizes the results for statement #12.

Table 17

Significant ANOVA Results for Statement #12

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	9.057	3	3.019	3.824	.018*
Years of Teaching Experience	3.585	5	.717	.908	.487
Level of Education Attained	5.042	4	1.261	1.597	.198
Within	26.841	34	.789		
Total	44.000	46	.957		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.40	20
Intermediate Elementary (4-5)	5.18	11
Middle School (6-8)	4.38	8
High School (9-12)	4.38	9

*$p < .05$.

Survey statement #13 [Schools should vary the time allotted for learning according to the needs of each student] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.093$, $df = 3/47$, $p < .05$). Using the Scheffe test, significant differences were found between the high school respondents and the group of primary elementary respondents. The first two of the following comments were representative of those submitted by secondary teachers, while the elementary teachers' comments are summarized by the third comment.

> Philosophically, I agree; however, this is very difficult to do in reality.
>
> I personally do not feel this is practical--let's be practical and not so ideal!
>
> Sounds great! There's little use going on, unless the introduction or first steps are understood.

Tables 18 and 19 summarize the results for statement #13.

Table 18

Significant ANOVA Results for Statement #13

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	5.034	3	1.678	3.093	.039*
Years of Teaching Experience	3.134	5	.627	1.156	.350
Level of Education Attained	4.036	4	1.009	1.860	.139
Within	18.986	35	.542		
Total	31.667	47	.674		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.25	20
Intermediate Elementary (4-5)	4.91	11
Middle School (6-8)	4.88	8
High School (9-12)	4.22	9

*p< .05.

Table 19

Significant Scheffe Results for Statement #13

Mean	Group	High	Middle	Intermed.	Primary
4.222	High				
4.875	Middle				
4.909	Interm.				
5.250	Primary	*			

(*) denotes pairs of groups significantly different at the .05 level.

Survey statement #16 [Achieving successful learning outcomes is the responsibility of both the student and the teacher] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 4.765$, $df = 3/47$, $p < .05$). The Scheffe test did not highlight any significant differences between the groups. It is assumed that the differences exist as indicated by the group means. A number of teachers said the following:

> Experienced teachers should be able to involve students in planning the way in which specific objectives are achieved.

Table 20 summarizes the results for statement #16.

Table 20

Significant ANOVA Results for Statement #16

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	5.415	3	1.805	4.765	.007*
Years of Teaching Experience	1.777	5	.355	.939	.468
Level of Education Attained	3.515	4	.879	2.320	.076
Within	13.257	35	.379		
Total	21.979	47	.468		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.60	20
Intermediate Elementary (4-5)	5.55	11
Middle School (6-8)	4.88	8
High School (9-12)	5.67	9

*p< .05.

The statement [Evidence of student learning... should be the basis for students' next assignment] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 4.049$, $df = 3/47$, $p < .05$). The Scheffe test did not highlight any significant differences between the groups. It is assumed that the differences exist between the groups as indicated by the group means. A representative elementary response follows:

> Assignments should be based on the students' needs.

The secondary responses were summarized by the following:

> There isn't time enough in the day to individualized lesson plans for 90-130 students, nor is there time enough in a 45-50 minute period to teach several grouping levels.

Table 21 summarizes the results for statement #19.

Table 21

Significant ANOVA Results for Statement #19

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	8.380	3	2.793	4.049	.014*
Years of Teaching Experience	4.392	5	.878	1.273	.297
Level of Education Attained	3.433	4	.858	1.244	.310
Within	24.147	35	.690		
Total	37.000	47	.787		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	4.85	20
Intermediate Elementary (4-5)	5.18	11
Middle School (6-8)	4.50	8
High School (9-12)	4.22	9

*p< .05.

Survey statement #20 [Students who do not initially master an objective should be provided additional instructional and evaluative opportunities to do so] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 19.106$, $df = 3/47$, $p < .05$). Using the Scheffe test, significant differences were found between the groups of primary elementary respondents and the middle and high school respondents, as well as between the intermediate elementary respondents and the middle and high school respondents. An example of a recurrent secondary response follows:

> Some of this could be done during the period, but much would have to be done outside the class period. I haven't found many students who need remedial work that will come before school or after school.

Table 22 and 23 summarizes the results for statement #20.

Table 22

Significant ANOVA Results for Statement #20

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	14.215	3	4.738	19.106	.000*
Years of Teaching Experience	2.082	5	.416	1.679	.166
Level of Education Attained	1.287	4	.322	1.298	.290
Within	8.680	35	.248		
Total	23.979	47	.510		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.50	20
Intermediate Elementary (4-5)	5.55	11
Middle School (6-8)	4.38	8
High School (9-12)	4.56	9

*p< .05.

Table 23

Significant Scheffe Results for Statement #20

		Middle	High	Primary	Intermed.
Mean	Group				
4.375	Middle				
4.555	High				
5.500	Primary	*	*		
5.545	Interm.	*	*		

(*) denotes pairs of groups significantly different at the .05 level.

The statement [Students who have mastered an objective should... move on to an appropriately challenging objective] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.067$, $df = 3/47$, $p < .05$). The Scheffe test did not identify any significant differences between the groups. It is assumed that the differences exist between the group as indicated by the group means. A typical elementary comment follows:

> These are the forgotten children--too many struggle with boredom because the rest aren't ready.

The senior high teachers' responses were summed up by the comment,

> Great in theory, but with 125 students a day--that's not very feasible.

Table 24 summarizes the results for statement #21.

Table 24

Significant ANOVA Results for Statement #21

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	3.767	3	1.256	3.067	.041*
Years of Teaching Experience	2.938	5	.588	1.435	.236
Level of Education Attained	1.538	4	.384	.939	.453
Within	14.331	35	.409		
Total	21.250	47	.452		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	5.15	20
Intermediate Elementary (4-5)	5.45	11
Middle School (6-8)	5.00	8
High School (9-12)	4.78	9

*p< .05.

The survey statement [Flexible grouping... is a workable process for planning and providing instruction for each student] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 3.025$, $df = 3/47$, $p < .05$). The Scheffe test did not indicate any significant differences between the groups. It is assumed that the differences exist among the groups as indicated by the group means. The middle school teachers' comments were summed up by the following response:

> Small special ed. groups maybe--1 teacher with 125 kids--no!.

A representative elementary response was as follows:

> This would require some changes, but I feel that this would better meet the students' needs.

Table 25 summarizes the results for statement #24.

Table 25

Significant ANOVA Results for Statement #24

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	5.066	3	1.689	3.025	.042*
Years of Teaching Experience	.467	5	.093	.167	.973
Level of Education Attained	2.931	4	.733	1.312	.285
Within	19.540	35	.558		
Total	27.917	47	.594		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	4.80	20
Intermediate Elementary (4-5)	4.36	11
Middle School (6-8)	4.00	8
High School (9-12)	4.22	9

*p< .05.

Statement #3 [Students are capable of achieving the essentials of formal schooling] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of teaching assignment ($F = 4.380$, $df = 3/47$, $p < .05$), as well as for level of education attained ($F = 4.203$, $df = 4/47$, $p < .05$). Using the Scheffe test, no significant differences were found between the groups of respondents. It is assumed that the differences exist among the groups as indicated by the group means. Representative responses were as follows:

> Even special ed. students are capable of IEP expectations.

> Students are capable of learning the essentials, but adjustments may need to be made to do so.

Table 26 summarizes the results for statement #3.

Table 26

Significant ANOVA Results for Statement #3

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	9.956	3	3.319	4.380	.010*
Years of Teaching Experience	1.282	5	.256	.338	.886
Level of Education Attained	12.738	4	3.184	4.203	.007*
Within	26.521	35	.758		
Total	45.812	47	.975		

Level of Teaching Assignment	Mean	n
Primary Elementary (K-3)	4.75	20
Intermediate Elementary (4-5)	4.73	11
Middle School (6-8)	4.50	8
High School (9-12)	4.00	9

(table continues)

Level of Education Attained	Mean	n
BA/BS	4.89	9
BA/BS +15	4.53	19
MA	3.91	11
MA +15	5.00	3
MA +30	5.17	6
Doctorate	0.00	0

*p< .05.

The statement [Teachers should be included in the planning of organizational changes] was assessed using a factorial analysis of variance. A significant main effect was obtained for level of education attained ($F = 2.983$, $df = 4/47$, $p < .05$). Using the Scheffe test, significant differences were found between the respondents at the MA +15 level of education and the respondents at the MA and MA +30 level of education. The following comments were typical of those offered by respondents:

> To provide input and be more aware of what is going on.
>
> Teachers are much better about changing if they're involved in what's going to be changed.
>
> Teachers need to be involved in planning and organization if implementation is going to be complete.
>
> Teachers are often afraid of change. They are hostile to it if it is suddenly thrust upon them.

Table 27 summarizes the results for statement #29.

Table 27

Significant ANOVA Results for Statement #29

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	2.939	3	.980	2.430	.082
Years of Teaching Experience	.817	5	.163	.405	.842
Level of Education Attained	4.808	4	1.202	2.983	.032*
Within	14.105	35	.403		
Total	23.812	47	.507		

Level of Education Attained	Mean	n
BA/BS	5.33	9
BA/BS +15	5.37	9
MA	5.73	11
MA +15	4.33	3
MA +30	5.83	6
Doctorate	0.00	0

*p< .05.

Table 28

Significant Scheffe Results for Statements #29

		MA+15	BA/BS	BA/BS+15	MA	MA+30
Mean	Group					
4.333	MA +15					
5.333	BA/BS					
5.368	BA/BS+15					
5.727	MA		*			
5.833	MA +30		*			

(*) denotes pairs of groups significantly different at the .05 level.

Survey statement #27 [With a system of flexible grouping... a computerized management system should be used] was assessed using a factorial analysis of variance. A significant main effect was obtained for years of teaching experience ($F = 2.882$, $df = 5/47$, $p < .05$) as well as level of education attained ($F = 4.350$, $df = 4/47$, $p < .05$). Using the Scheffe test, no significant differences were found between the groups of respondents. It is assumed that the differences exist between the groups as indicated by the group means. Representative comments included the following:

> As long as teachers are still consulted and communicate with each other.
>
> It's not necessary, but it would be nice if it saves time and you get quick feedback.

Table 29 summarizes the results for statement #27.

Table 29

Significant ANOVA Results for Statement #27

	Sum of Squares	DF	Mean Square	F	Sig. of F
Level of Teaching Assignment	3.700	3	1.233	1.323	.282
Years of Teaching Experience	13.431	5	2.686	2.882	.028*
Level of Education Attained	16.220	4	4.055	4.350	.006*
Within	32.325	35	.932		
Total	62.667	47	1.333		

Years of Teaching Experience	Mean	n
0-5	3.38	8
6-10	4.33	6
11-15	4.40	10
16-20	4.20	10
21-25	5.00	5
26 +	4.00	9

(table continues)

Outcomes-Based Education

Level of Education Attained	Mean	n
BA/BS	4.56	9
BA/BS +15	4.37	19
MA	3.73	11
MA +15	2.33	3
MA +30	4.67	6
Doctorate	0.00	0

*$p < .05$.

The ANOVA indicated significant differences among group means for 14 of the survey's 39 statements. Eleven of those statements showed significant differences by level of teaching assignment. One statement provided differences by level of teaching assignment and level of education attained. Level of education attained was the area of significant difference for one other statement. One statement provided differences by years of teaching experience and level of education attained.

Of the statements showing significant differences among the groups, three were related to Philosophy, two were related to Curriculum Structure considerations and three dealt with Instructional Delivery issues. Three survey statements were related to Assessment and Monitoring concerns, three were in the Organizational Structure section and one of the statements was in the section on Administrative Support and Staff Development. Table 30 displays the number of survey statements for each section of the survey found to exhibit significant differences for the independent variables.

Table 30

Number of Survey Statements by Area of Main Effects

Section of Survey	Level of Teaching Assignmt.	Level of Teaching & Level of Educ. Attained	Level of Education Attained	Level of Education & Years of Teaching Experience
Philosophy	#2,4,5	#3		
Curriculum Structure	#7			
Instructional Delivery	#12,13,16			
Assessment & Monitoring	#19,20,21			
Organizational Structure	#24			#27
Admin. Support & Staff Devel.			#29	

Discussion of Results

The teachers' perceptions of OBE issues were found to be positive as indicated by the scaled responses and written comments. The participants demonstrated overall agreement, ranging from mild to nearly strong, with the survey statements regarding the effects of implementation of OBE. The statements concerning Outcomes-Based Education (OBE) dealt with areas of philosophy, curriculum structure, instructional delivery, assessment and monitoring procedures, organizational structure and staff development. The basic premises of OBE, as outlined by Spady (1981), emphasized the philosophical, instructional, organizational and evaluation concerns of implementing OBE. The survey statements were designed to gather teacher perceptions of the various areas effected by OBE practices. The teachers' perceptions related positively with the premises of OBE practice, as evidenced by the group means and written comments presented in Chapter Four.

Differences among the groups of respondents' perceptions were indicated by an ANOVA. Sixteen main

effects were found significant for 14 of the survey statements. Of the statements showing significant differences among the groups, three were related to Philosophy, two were related to Curriculum Structure considerations and three dealt with Instructional Delivery issues. Three survey statements were related to Assessment and Monitoring concerns, three were in the Organizational Structure section and one of the statements was in the section on Administrative Support and Staff Development. Years of teaching experience and level of education attained figured in the main effects for only three statements. For 12 of the 16 main effects noted, level of teaching assignment indicated differences among the groups of teachers.

But how significant are those differences? Although the differences between groups of teachers by level of teaching assignment were deemed statistically significant, the practical significance of the differences between moderate and mild agreement, or moderate to more than moderate agreement needs to be addressed.

Statistically, there were differences, but from a practical standpoint, agreement was demonstrated among

the participants regarding the statements. Their written comments gave additional information regarding the unique perspectives of the various level, but as groups, none disagreed with the concepts presented by the survey. Their comments and scaled responses reflected each level's unique orientation to the educational process in general and OBE issues in particular. The elementary groups indicated slightly more positive perceptions of the areas of OBE philosophy and practice than the middle or senior high school teachers. Elementary teachers seemed to comment from a student-centered stance, voicing questions about the effects on individual students. Secondary teachers appeared to respond from a subject-specialist viewpoint, raising issues concerning the practicality of dealing with large numbers of students and the limited time in which to cover portions of the curriculum. Even expressing their own level's orientation, each of the groups demonstrated positive perceptions regarding the OBE issues presented in the survey.

Although there was not a wide range of disagreement presented, the participants shared their

particular perceptions of the OBE issues. The Delphi survey elicited a variety of comments and provoked written discussion until there existed a general agreement with and positive perceptions of the basic premises of Outcomes-Based Education. Interest was raised within the district in seeing how the theories translate into practice.

Conclusions

In order to successfully implement an OBE system, a school district needs to thoroughly plan the phases of the implementation. The Network for Outcomes-Based Education cited four major barriers to the implementation of OBE, which may undermine the success of OBE implementation if not addressed. The four barriers were:

1) the attitudes and beliefs of staff regarding themselves and their students' performance;
2) the new techniques and redefinition of roles and responsibilities required of staff;
3) existing organizational structures and procedures; and

4) the system of power and incentive governing the conditions of staff service, performance, and influence (Mitchell and Spady, 1978, p.9).

The Delphi survey presented statements regarding concepts from these four areas and gathered the teachers' perceptions of OBE. The participants indicated favorable perceptions toward OBE premises and the effects of implementation of OBE concepts. Differences were found to exist most frequently among groups of participants by level of teaching assignment. The results indicated that although the participants expressed positive perceptions of OBE issues, teachers at each level of teaching assignment (primary, intermediate, middle and high school), presented a unique set of perceptions and concerns to be addressed during the actual implementation process.

REFERENCES

Berman, P. & McLaughlin, M. (1978). Federal programs supporting educational change, vol. VIII: Implementing and sustaining innovations. Santa Monica, CA: Rand Corporation.

Borg, W. R. & Gall, M. D. (1983). Educational research: An introduction(4th ed.). New York: Longman.

Burns, R. (1987). Models of instructional organization: A casebook on mastery learning and outcome-based education. San Francisco, CA: Far West Laboratory for Educational Research and Development.

Cyphert, F. R. & Gant, W. L. (1971). The delphi technique: A tool for collecting opinions in teacher education. Phi Delta Kappan, 52, 272-273.

Delbecq, A. L. Van de Ven, A. H. & Gustafson, D. H. (1975). Group techniques for program planning: A guide to nominal group and delphi processes. Glenview, IL: Scott, Foresman.

Fenstermacher, G. D. & Berliner, D. C. (1985). Determining the value of staff development. Elementary School Journal, 85, 281-314.

Hartman, A. (1981). Reaching consensus using the delphi technique. Educational Leadership, 38, 495-497.

Iowa State Board of Education. (1988). New standards for Iowa Schools. Des Moines, Iowa: Author.

Irvine, I. (1986). Forecasting the aims, content and organization of college general education programs: A delphi study. (Doctoral Dissertation, Fordham University, 1986.) Dissertation Abstracts International, 47, 1591-A.

Kirk, R. E. (1982). Experimental design: Procedures for the behavioral sciences. New York: Brooks/Cole Publishing.

Linstone, H. A. & Turoff, M. (Eds.). (1975). The delphi method: Techniques and application. Reading, MA: Addison-Wesley.

Mitchell, D. E. & Spady, W. G. (1978). Organizational contexts for implementing outcome-based education. Educational Research, 7, 9-17.

Spady, W. G. (1981). Outcome-based instructional management: a sociological perspective. (Contract No. NIE-P-80-0194). Washington, DC: National Institute of Education: American Association of School Administrators, Arlington, VA. (ERIC Document Reproduction Service No. ED 244 728)

Spady, W. G., Filby, N. & Burns, R. (1986). Outcome-based education: A summary of essential features an major implications. San Francisco, CA: Far West Laboratory for Educational Research and Development.

Spinelli, T. (1983). The delphi decision-making process. Journal of Psychology, 113, 73-80.

Stag, R. G. (1983). A study of an Arkansas community college general education and business core curriculum using the delphi method. (Doctoral Dissertation, University of South Dakota, 1983). Dissertation Abstracts International, 44, 2661-A.

Weaver, W. T. (1971). The delphi forecasting method. Phi Delta Kappan, 52, 267-271.

APPENDIX

Teacher Perceptions of Outcomes-Based Education
A Delphi Survey

Please read the following paragraphs and statements, and respond by **circling** the **number** on the scale representing your level of agreement. The scale intervals are:

strongly disagree **1**	disagree **2**	mildly disagree **3**	mildly agree **4**	agree **5**	strongly agree **6**

You may **write comments** in the space below each statement. The following example shows the respondent's level of agreement and an accompanying comment.

Statement:

A Delphi survey is an effective method for conducting an anonymous discussion.

Scale:

1	2	3	4	(5)	6

Comment: *Because it is anonymous, I feel free to express my true feelings on the subjects addresssed.*

The survey is then returned to the researcher, who will tally the scaled responses, compile the comments, and send a feedback report and the revised set of statements to the participants again. The group scores and anonymous comments for each statement are included in the feedback report. In light of the new information presented from the other respondents, participants are asked to respond again to each statement and add any comments.

Once more the survey is returned to the researcher who will tally and compile the results. The feedback report for the second round and the set of statements are again sent to the participants for their consideration.

When the third round is returned to the researcher, she will examine the response scores for consensus, and interpret and report the data generated by the group's discussion. The three surveys will be sent out and gathered over a period of approximately three months.

Please send this completed questionnaire to *Wendy Burns,* Administrative Service Center, by *Tuesday, January 31, 1989*. Thank you for your participation!

TEACHERS' PERCEPTIONS OF THE EFFECTS OF IMPLEMENTATION OF OUTCOMES-BASED EDUCATION: A DELPHI SURVEY

Please complete the following demographic information. This information will be used to compare and contrast the responses of participants within this group, to discover any differences in the perceptions of teachers. This information, as well as your responses to the survey statements, will be kept confidential.

1. Level of teaching assignment:

_____ primary elementary (K-3) _____ intermediate (4-5)

_____ middle school (6-8) _____ high school (9-12)

2. Total years of teaching experience:

_____ 0-5 years _____ 6-10 years _____ 11-15 years

_____ 16-20 years _____ 21-25 years _____ 26 or more years

3. Level of education attained:

_____ BA/BS _____ BA +15 hours _____ MA

_____ MA +15 hours _____ MA +30 hours _____ Doctorate

Code: _____

I. PHILOSOPHY

The philosophical considerations of an Outcomes-Based Education (OBE) program have at the center, the beliefs that: all students can learn and schools control the conditions under which learning takes place. OBE programs assert that instruction can be arranged so that virtually all students can learn the information, concepts and skills embodied in the curriculum.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. Students can learn the required curriculum.

Comments:

b. Schools control the conditions under which learning takes place.

1	2	3	4	5	6

Comments:

c. Students are capable of achieving the essentials of formal schooling.

1	2	3	4	5	6

Comments:

d. Success influences self-concept; self-concept learning and behavior. Therefore, schools should develop success-oriented curriculums.

1	2	3	4	5	6

Comments:

e. Student achievement is influenced by the establishment of a classroom climate which affirms the worth of students.

1	2	3	4	5	6

Comments:

II. CURRICULUM STRUCTURE

Curriculum structure issues deal with the development of student outcomes defined as goals and objectives.

Curricular materials are sequenced in a logical fashion to attain outcomes, goals and objectives.

Please respond to the statements on the basis of the feasibility of implementing these concepts.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. Schools should specify expected learning outcomes.

Comments:

b. Curriculum should be organized by specific learning objectives.

1	2	3	4	5	6

Comments:

c. Students should be expected to perform at high levels of learning.

1	2	3	4	5	6

Comments:

II. CURRICULUM STRUCTURE (continued)

d. Curriculum development needs to be an ongoing, continual process.

1	2	3	4	5	6

Comments:

e. Every subject should have curriculum guides containing learning outcomes specified by grade level.

1	2	3	4	5	6

Comments:

f. Instruction should be geared toward specific learning objectives.

1	2	3	4	5	6

Comments:

III. INSTRUCTIONAL PRACTICE

Instructional practice refers to those procedures, translated from theory, which teachers do to engage students in the teaching/learning cycle. In an OBE system, the emphasis is not on the amount of material that a student covers, but on student mastery of specified objectives.

Please respond to the statements on the basis of the feasibility of implementing these concepts.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. The rate at which content is presented to students should be determined by how well the students are mastering the information.

Comments:

b. Schools should vary the time allotted for learning according to the needs of each student.

1	2	3	4	5	6

Comments:

c. It is necessary for students to master prerequisite skills before moving on in the curriculum.

1	2	3	4	5	6

Comments:

III. INSTRUCTIONAL PRACTICE (continued)

d. Teachers should structure student instruction so that all students experience opportunities for success.

1	2	3	4	5	6

Comments:

e. Achieving successful learning outcomes is the responsibility of both the student and the teacher.

1	2	3	4	5	6

Comments:

f. Curriculuim can be arranged according to learning outcomes, and expressed as learning objectives, which students are expected to master.

1	2	3	4	5	6

Comments:

IV. ASSESSMENT AND MONITORING PROCEDURES

The assessment procedures component of an instructional program includes the frequent monitoring and assessing of student progress, so that instructional decisions regarding the students' progress can be made and enrichment or corrective feedback can be given to the students. In OBE instructional units, a criterion standard is set and diagnosis, prescription, feedback, and correction are all focused on helping the student reach the criterion so that a subsequent task assignment can be pursued.

Please respond to the statements on the basis of the feasibility of implementing these concepts.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. Formative evaluation, coupled with individualized corrective feedback should be part of every teaching unit.

Comments:

b. Evidence of student learning, as shown on a criterion-referenced assessment, should be the basis for the students' next assignment.

1	2	3	4	5	6

Comments:

IV. ASSESSMENT AND MONITORING PROCEDURES (continued)

c. Students who do not initially master an objective should be provided additional instructional and evaluative opportunities to do so.

1	2	3	4	5	6

Comments:

d. Students who have mastered an objective should have the opportunity to move on to an appropriately challenging objective.

1	2	3	4	5	6

Comments:

e. Schools should award grades/credit whenever student mastery is demonstrated, rather than only at predetermined times, such as quarters and semesters.

1	2	3	4	5	6

Comments:

f. Criterion-referenced tests should be based on the learning objectives taught in order to achieve an alignment between teaching and testing.

1	2	3	4	5	6

Comments:

V. ORGANIZATIONAL ARRANGEMENTS

Fixed time and program assignments determine the learning experiences of students, rather than the students determining the learning task and the time required for mastery. Continuous progress and flexible grouping describe the typical Outcomes -Based Education approach, in which students move from task to task in a time flexible manner in each content area. Students are reassigned to homogeneous instructional groups as their mastery of objectives and needs for other objectives dictate.

Please respond to the statements on the basis of the feasibility of implementing these concepts.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. Flexible grouping of students according to the skills/concepts they are ready for, is a workable process for planning and providing instruction appropriate for each student.

Comments:

b. Schools should frequently re-group students for instruction according to the objectives the students need.

1	2	3	4	5	6

Comments:

c. A criterion-referenced information management system would facilitate instructional planning for flexible grouping of students.

1	2	3	4	5	6

Comments:

d. With a system of flexible grouping and continuous progress, a computerized information mangement system should be utilized.

1	2	3	4	5	6

Comments:

e. Providing frequent formative evaluation and corrective feedback to students should be an integral part of the instructional process.

1	2	3	4	5	6

Comments:

VI. ADMINISTRATIVE SUPPORT AND STAFF DEVELOPMENT

Administrative support and staff development are essential portions of implementing a building or district—wide change. Following adoption of the Outcomes-Based Education philosophy, districts conduct inservices and workshops for teachers concerning components of OBE such as mastery learning, criterion-referenced testing, and instructional management principles, etc.

Please respond to the statements on the basis of the feasibility of implementing these concepts.

Directions: *Circle the number representing your level of agreement.*

Strongly Disagree	Disagree	Mildly Disagree	Mildly Agree	Agree	Stronly Agree
1	2	3	4	5	6

a. Teachers should be included in the planning of organizational changes.

Comments:

1	2	3	4	5	6

b. The adjustments involved in implementing an Outcomes-Based Education {OBE} system would facilitate student learning.

Comments:

VI. ADMINISTRATIVE SUPPORT AND STAFF DEVELOPMENT (continued)

c. Teachers at my grade level should have inservice sessions in mastery learning techniques prior to instituting an OBE system.

1	2	3	4	5	6

Comments:

d. Teachers at my grade level should have inservice sessions in assessment and monitoring if an OBE system is adopted.

1	2	3	4	5	6

Comments:

e. Teachers at my grade level should have inservice sessions regarding instructional management principles and techniques prior to implementing an OBE system.

1	2	3	4	5	6

Comments:

VI. ADMINISTRATIVE SUPPORT AND STAFF DEVELOPMENT (continued)

f. The administrators at my level would need inservice sessions in mastery learning techniques prior to implementing an OBE system.

1	2	3	4	5	6

Comments:

g. The administrators at my level should have inservice training in assessment and monitoring if an OBE system is adopted.

1	2	3	4	5	6

Comments:

h. The administrators at my level should have inservice sessions regarding instructional management principles and techniques prior to implementing an OBE system.

1	2	3	4	5	6

Comments:

VI. ADMINISTRATIVE SUPPORT AND STAFF DEVELOPMENT (continued)

i. Teachers and administrators should be involved in selecting/writing grade level objectives subjects.

1	2	3	4	5	6

Comments:

j. Teachers and administrators should be involved in writing/choosing the curriculum to teach the objectives.

1	2	3	4	5	6

Comments:

k. From what I've read about Outcomes-Based Education, my teaching would have to change if such a program were implemented.

1	2	3	4	5	6

Comments: